REMARKS

Claims 8-12, 14 and 25 have been withdrawn. Claims 1-4, 13, 16-24 and 26 are currently pending. Claim 26, which was not subject to the restriction requirement and is a dependent claim, has been amended merely to incorporate the language of independent claim 12. New claim 27 has been added to further clarify the invention. Support for claim 27 can be found in Example 2 the Specification as originally filed.

No new matter has been added. Applicants respectfully request entry of new claim 27.

35 U.S.C. § 103(a) Rejection Under Morin and Chin

Claims 1-4, 13, 18-24 and 26 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,610,839 ("Morin") and U.S. Patent No. 6,197,599 ("Chin") (Office Action, p. 2). Applicants traverse.

The Examiner states that Morin discloses the invention substantially as claimed in that it discloses (a) inserting a marker DNA sequence in frame immediately preceding a stop codon or each of a plurality of target DNA sequences to form a plurality of modified DNA sequences which encode a plurality of modified amino acid sequence each comprising a marker moiety; (b) expressing the plurality of modified amino acid sequences from the plurality of modified DNA sequences; (c) bringing the plurality of modified amino acid sequences into contact with a solid support wherein the marker moiety of the plurality of modified amino acid sequences is able to attach to the solid support; and (d) washing said solid support to remove unbound proteins. The Examiner states that Morin teaches the use of the fusion protein system to isolate specific proteins and peptides, but does not teach that the bound proteins are in an array. The Examiner states that Chin teaches this limitation and that it would have been obvious to one skilled in the art at the time the invention was made to form the immobilized proteins in the Morin invention in the form of an array as taught by Chin for the advantage of identifying a protein based on its position and studying a wide variety of proteins in a single experiment for convenience (Office Action, p. 3).

MPEP § 2142 states that for a *prima facie* case of obviousness, a prior art reference must teach or suggest all the claim limitations. In addition, there must be a suggestion or motivation in the reference to modify the prior art to obtain the claimed invention. MPEP § 2143.01. Here, neither requirement has been met. The claimed invention is neither disclosed nor suggested by Morin. Morin describes the cloning of the hTRT sequence into an expression vector which then encodes full length hTRT fused at its C-terminus to the Myc epitope and His6 reporter tag sequences (column 156, lines 18-23). Morin is critically deficient. First, Morin does not describe methods for generating a protein array with a plurality of sequences. Second, Morin's modifications at the stop codon are different than those recited in the current claims – specifically, Morin removes and replaces the stop codon ("The hTRT stop codon has been removed and replaced by vector sequences encoding the Myc epitope and the His6 reporter tag as well as a stop codon." See, Morin, col. 156, lines 23-26). Third, Morin's method necessarily requires knowledge of the full length sequence being modified (in this case hTRT) since Morin's method requires that the known sequence be inserted into a vector comprising the marker moiety. This method is ineffectual in situations where, for example, the desire is to modify a library of unknown DNA sequences. Applicants' current claims, on the other hand, recite a method of generating a protein array where the marker moiety is inserted *into* the nucleic acid sequence coding for the protein. No knowledge of the sequence being modified is necessary. Furthermore, Morin teaches purification of the protein prior to analysis, thus requiring elution of the tagged proteins from the solid surface prior to analysis (see *inter alia* Morin, col. 57, lines 31-53). Applicants' current claims recite a method comprising a single step that purifies and immobilizes affinity-tagged proteins. This recitation is incorporated into each of claims 2-4, 13, 18-24 and 26 because of their dependency on claim 1. The inclusion of Chin does not make up for the defect of Morin. Even though Chin discloses bound proteins in an array, there is no teaching or suggestion that affinity-tagged proteins are immobilized via the tag, as set forth in Applicants' claim 1. Furthermore, Chin in fact teaches away from the present invention in that it specifically teaches separate steps of constructing affinity-tagged proteins, expressing them, then purifying them before immobilizing them onto a solid surface (see Chin, col. 5, lines 61-67).

Based on the foregoing reasons, it is respectfully asserted that instant claims 1-4, 13, 18-24 and 26 are not unpatentable over Morin and Chin. Withdrawal of this ground of rejection is respectfully requested.

35 U.S.C. § 103(a) Rejection Under Morin, Chin and Ben-Bassat

Claims 16 and 17 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Morin in view of Chin and further in view of U.S. Patent No. 4,865,974 ("Ben-Bassat") (Office Action, p. 4). Applicants traverse.

The Examiner states that Morin discloses the invention substantially as claimed, as set forth above. The Examiner states that Morin teaches use of the fusion protein system to isolate specific proteins and peptides and that Chin teaches that the bound proteins are in an array (Office Action, p. 5). The Examiner further states that neither Morin nor Chin disclose the steps of digesting the target DNA sequence, annealing the marker DNA sequence and ligating the marker DNA sequence, but that Ben-Bassat teaches that the steps of digesting, annealing and ligating are well-known in the art for removing and replacing DNA sequences (Office Action, p. 6).

MPEP § 2142 states that for a *prima facie* case of obviousness, a prior art reference must teach or suggest all the claim limitations. In addition, there must be a suggestion or motivation in the reference to modify the prior art to obtain the claimed invention. MPEP § 2143.01. Here, for the same reasons set forth above, neither requirement has been met. Morin does not teach or suggest the invention as claimed in claims 16 and 17. For the same reasons as set forth above, Chin does not cure the defect of Morin. The Examiner cites Ben-Bassat as teaching the steps of digesting, annealing and ligating for the removal and replacement of DNA sequences. However, the inclusion of Ben-Bassat also does not cure the deficiencies of Morin. Ben-Bassat does not teach the method of making a protein array disclosed in claims 16 and 17.

Based on the foregoing reasons, it is respectfully asserted that instant claims 16 and 17 are not unpatentable over Morin, Chin and Ben-Bassat. Withdrawal of this ground of rejection is respectfully requested.

35 U.S.C. § 103(a) Rejection Under Morin, Chin, Orr and Nielsen

Claim 24 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Morin in view of Chin and further in view of U.S. Patent No. 5,741,645 ("Orr") and U.S. Patent No. 6,350,853 ("Nielsen") (Office Action, p. 6). Applicants traverse.

The Examiner states that Morin discloses the invention substantially as claimed, as set forth above. The Examiner states that Morin teaches use of the fusion protein system to isolate specific proteins and peptides and that Chin teaches that the bound proteins are in an array (Office Action, p. 7). The Examiner further states that neither Morin nor Chin disclose two markers, one immediately following a start codon and one immediately preceding a stop codon and that Orr discloses this limitation (Office Action, p. 8). The Examiner states that Orr teaches the use of two flanking markers for the advantage of isolating region-specific DNA markers and that Nielsen teaches a marker sequence immediately following a start codon.

MPEP § 2142 states that for a *prima facie* case of obviousness, a prior art reference must teach or suggest all the claim limitations. In addition, there must be a suggestion or motivation in the reference to modify the prior art to obtain the claimed invention. MPEP § 2143.01. Here, for the same reasons set forth above, neither requirement has been met. Morin does not teach or suggest the invention as claimed in claim 24. For the same reasons as set forth above, Chin does not cure the defect of Morin. The Examiner cites Orr and Nielsen as teaching the use of two flanking markers. However, the inclusion of Orr and Nielsen do not cure the defect of Morin. Neither Orr nor Nielsen teach the method of making a protein array disclosed in claim 24.

Based on the foregoing reasons, it is respectfully asserted that instant claim 24 is not unpatentable over Morin, Chin, Orr and Nielsen. Withdrawal of this ground of rejection is respectfully requested.

CONCLUSION

Applicants have corrected the listing of claims to include the text of all pending claims (including withdrawn claims) to comply with the Notice of Non-Compliant Amendment (37 CFR 1.121). No new matter has been added and the entry of the amendments are respectfully requested.

On the basis of the foregoing amendment and remarks, Applicants respectfully submit, that the pending claims are in condition for allowance. If there are any questions regarding this amendment and remark, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

While Applicants believe that no additional fees are due, the Director is authorized to charge all fees that may be due, or to credit any overpayment, to the undersigned's account, Deposit Account No. **50-0311**, Reference No.: **27353-501 UTIL** (Customer Number: **35437**).

Respectfully submitted,

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